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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/726,643	12/01/2000	Steven M. Ruben	PZ040P1	2092

22195 7590 05/28/2003

HUMAN GENOME SCIENCES INC  
9410 KEY WEST AVENUE  
ROCKVILLE, MD 20850

EXAMINER
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SPIEGLER, ALEXANDER H

ART UNIT	PAPER NUMBER
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1637

DATE MAILED: 05/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/726,643

Applicant(s)

RUBEN ET AL.

Examiner

Alexander H. Spiegler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 July 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 13, 15, 16 and 18-76 is/are pending in the application.
- 4a) Of the above claim(s) 1-10, 13, 15, 16, 18-23 and 76 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-75 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. This action is in response to Paper No. 11, filed on July 9, 2002. Currently, claims 1-10, 13, 15-16, and 18-76 are pending; claims 24-75 have been examined on the merits, and claims 1-10, 13, 15-16, 18-23 and 76 have been withdrawn from consideration as being drawn to a non-elected invention.

2. The 112, 1<sup>st</sup> paragraph (written description) and 2<sup>nd</sup> paragraph rejections have been withdrawn due to Applicants' amendments and arguments in Paper No. 11.

3. In an interview on June 26, 2002, Applicants asserted that SEQ ID NO: 56 could have utility as a marker for B-cell lymphoma. At that time, Applicants were informed that SEQ ID NO: 56 had utility as a marker for B-cell lymphoma. However, after further consideration, SEQ ID NO: 56 does not have utility as a marker for B-cell lymphoma because the specification does not teach any protein expression patterns of SEQ ID NO: 56 with respect to B-cell lymphoma. That is, while the specification teaches that Gene No: 11 (i.e., the gene that encodes SEQ ID NO: 56) is primarily expressed in B-cell lymphoma, the specification provides no data as to the protein expression of SEQ ID NO: 56 (e.g., whether SEQ ID NO: 56 is expressed in individuals with B-cell lymphoma, but not in normal individuals, or SEQ ID NO: 56 is over expressed in individuals with B-cell lymphoma, as compared to normal individuals). Therefore, because the claimed invention is not supported by a substantial or well-established utility, the 101 rejection is maintained.

4. This action is made NON-FINAL.

### *Claim Rejections - 35 USC 101*

5. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 24-75 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility, due to its not being supported by a substantial asserted utility or a well-established utility.

The pending claims have been reviewed in light of the Utility Examination Guidelines Federal Register, Vol. 66, No. 4, pages 1092-1099, Friday, January 5, 2001, as well as the MPEP and existing law.

To satisfy the utility requirement, the claimed invention must have a specific and Substantial utility, or in the alternative, the claimed invention must have a well-established utility. In the instant case, the claimed invention does not have a substantial utility or a well-established utility. Applicants' assertion that SEQ ID NO: 56 may be used as a marker for B-cell lymphoma can be considered as a specific utility.

I. *The specification does not assert a substantial utility because the utilities asserted by Applicants requires or constitutes carrying out further research to identify or reasonably confirm a "real world" use.*

MPEP 2107.01 states:

A "substantial utility" defines a "real world" use. Utilities that require or constitute carrying out further research to identify or reasonably confirm a "real world" context of use are not substantial utilities...the following are examples of situations that require or constitute carrying out further research to identify or reasonably confirm a "real world" context of use and, therefore, do not define "substantial utilities":

(A) Basic research such as studying the properties of the claimed product itself or the mechanisms in which the material is involved;

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The specification states Gene 11 (i.e., HYACJ27cDNA), which encodes SEQ ID NO: 56 is expressed "primarily" in B-cell lymphoma (see page 36). However, no protein expression data of SEQ ID NO: 56 is provided. That is, the specification is silent as to any expression patterns of SEQ ID NO: 56. For example, the specification does not show that SEQ ID NO: 56 is expressed in individuals with B-cell lymphoma, but not in normal individuals, or SEQ ID NO: 56 is over expressed in individuals with B-cell lymphoma, as compared to normal individuals.

The specification postulates that expression of the protein of SEQ ID NO: 56 may be useful in treatment and diagnoses of cancers and disorders of the immune and hemopoietic systems, including but not limited to anemia, pancytopenia, leukopenia, thrombocytopenia or leukemia (pg. 36). The specification further suggests that the protein of SEQ ID NO: 56 could be used in the treatment of immunological disorders, such as infection, inflammation, allergy, immunodeficiency, etc. (pg. 36). Finally, the specification asserts that SEQ ID NO: 56 can be used as a marker for B-cell lymphoma (pg. 37).

In order for a polypeptide to be useful for diagnosis of a disease, there must be a well-established or disclosed correlation or relationship between the claimed polypeptide and a disease or disorder. The presence of a polypeptide in tissue that is derived from cancer cells is not sufficient for establishing a utility in diagnosis of disease in the absence of some information regarding a correlative or causal relationship between the expression of the claimed cDNA and the disease. If a molecule is to be used as a surrogate for a disease state, some disease state must be identified in some way with the molecule. There must be some expression pattern that would allow the claimed polypeptide to be used in a diagnostic manner. Many proteins are expressed in normal tissues and diseased tissues. Therefore, one needs to know, e.g., that the claimed

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polypeptide is either present only in cancer tissue to the exclusion of normal tissue or is expressed in higher levels in diseased tissue compared to normal tissue (i.e., overexpression). Evidence of a differential expression might serve as a basis for use of the claimed polypeptide as a diagnostic for a disease. However, in the absence of any disclosed relationship between the claimed protein and any disease or disorder and the lack of any correlation between the claimed polypeptide with any known disease or disorder, any information obtained from an expression profile would only serve as the basis for further research on the observation itself. "Congress intended that no patent be granted on a chemical compound whose sole 'utility' consists of its potential role as an object of use-testing." *Brenner v. Manson*, 148 USPQ 692 (US SupCt 1966).

Additionally, in *Brenner v. Manson*, 148 USPQ 696 (US SupCt 1966) the Court stated, "a patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion. [A] patent system must be related to the world of commerce rather than to the realm of philosophy."

In the instant case, the specification has only taught that Gene 11 is "expressed primarily in B-cell Lymphoma". However, the specification does not teach any information regarding the protein expression of SEQ ID NO: 56, nor does it teach whether normal individuals expressed Gene 11, or what this expression was compared to, as to conclude that the gene is "expressed primarily". Therefore, the specification, at best, provides only a starting point for using SEQ ID NO: 56. It is apparent that extensive further research, not considered to be routine experimentation, would be required before one skilled in the art would know how to use the claimed invention. One skilled in the art would need to carry out further research to find a substantial utility for the invention as claimed, and therefore, the invention as claimed, is merely

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considered to be a research tool. Accordingly, the alleged utilities summarized above do not define a "real world" use because the claimed polypeptide can only be used for "basic research such as studying the properties of the claimed product itself *or the mechanisms in which the material is involved*" (e.g., using SEQ ID NO: 56 as a marker for B-cell lymphoma) (emphasis added).

II. *The specification is not supported by a well-established utility because one of ordinary skill in the art would not immediately appreciate why the invention is useful based on the characteristics on the invention.*

MPEP 2107 states:

"An invention has a well-established utility if (i) a person of ordinary skill in the art would immediately appreciate why the invention is useful based on the characteristics of the invention (e.g., properties or applications of a product or process), and (ii) the utility is specific, substantial, and credible."

Applicants have provided little to no evidence of the characteristics of the specifically claimed polypeptide, the specification is not substantial, and based on the laundry lists of possible asserted utilities, it is not apparent as to how "a person of ordinary skill in the art would immediately appreciate why the invention is useful". This is evidenced by the fact that further research would need to be carried out by the skilled artisan even given SEQ ID NO: 56. For example, given SEQ ID NO: 56, a skilled artisan would have to carry out experiments to determine whether SEQ ID NO: 56 is expressed in diseased individuals and not in normal individuals, or whether SEQ ID NO: 56 is overexpressed in diseased individuals, as compared to normal individuals, etc. Furthermore, Applicants assert that their invention "relates to newly identified...polypeptides...uses of polynucleotides, polypeptides", which suggests there is no

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"well-established" utility for SEQ ID NO: 56. For these reasons, the specification is not supported by a well-established utility.

Accordingly, the claimed invention is not supported by a substantial asserted utility or a well-established utility.

7. Claims 24-75 are also rejected under 35 U.S.C. §112, first paragraph. Specifically, since the claimed invention is not supported by a substantial or well-established utility for the reasons set forth above, one skilled in the art would not know how to use the claimed invention.

#### *Conclusion*

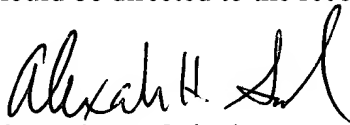
8. No claims are allowable.


#### *Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander H. Spiegler whose telephone number is (703) 305-0806. The examiner can normally be reached on Monday through Friday, 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (703) 308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 and (703) 305-3014. Applicant is also invited to contact the TC 1600 Customer Service Hotline at (703) 308-0198.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

  
Alexander H. Spiegler  
May 27, 2003

  
KENNETH R. HORLICK, PH.D.  
PRIMARY EXAMINER

5/27/03